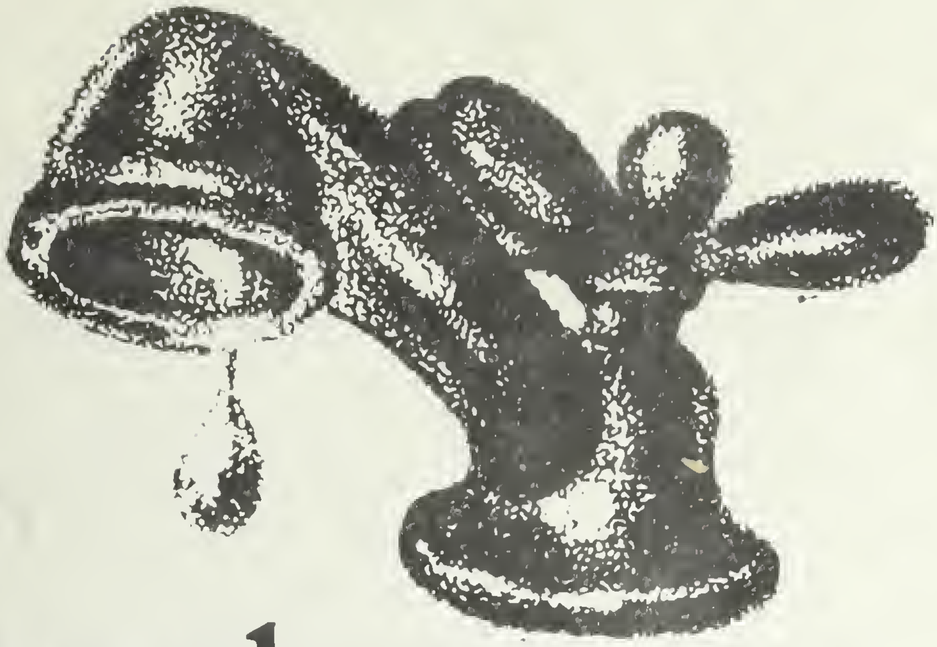

National Drinking Water Advisory Council

Annual Report for 1976

Prepared for:
U.S. Environmental
Protection Agency
Washington, D.C. 20460

NATIONAL DRINKING WATER ADVISORY COUNCIL

ANNUAL REPORT

FOR

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To the Reader:

This report summarizes the activities of the National Drinking Water Advisory Council during 1976. The Council was created by Congress in December 1974 with the passage of Public Law 93-523, "The Safe Drinking Water Act," in order to provide the Administrator of the Environmental Protection Agency practical and independent advice on the implementation of the Law. This report marks the second year in existence for the Council.

During 1976 the Council provided the Administrator of EPA advice on a wide range of water supply issues including organic contaminants in drinking water, water supply public communications activities, proposed Underground Injection Control Regulations, and modifications to the Safe Drinking Water Act. The positive reactions by EPA to most of the Council's recommendations have reinforced a mutual relationship exhibited between the Council and EPA with the goal of achieving safe drinking water for all Americans.

The Council also serves as a forum for the public to share and understand safe drinking water issues. During 1976 forty-three individuals addressed the Council and over 106 different organizations were represented at the Council meetings. The public interest and participation in the Council meetings give the public clear involvement in the implementation of the safe drinking water program. This was the intent of Congress in establishing the Council.

The Council solicits your comments on pertinent safe drinking water issues and welcomes your participation in future meetings.

Charles C. Johnson, Jr.
Chairman
National Drinking Water Advisory Council

COUNCIL MEMBERS

Ms. Betty Abbott

Dr. John Beare

Dr. Russell F. Christman

Mr. Jack T. Garrett

Mr. Henry J. Graeser

Dr. John W. Hernandez, Jr.

Dr. Hollis S. Ingraham

Mr. Charles C. Johnson, Jr.

Dr. Jay H. Lehr

Mr. Walter K. Morris

Mr. Henry J. Ongerth

Mr. William R. Ralls

Ms. Jeanne C. Rhinelander

Mr. Chester A. Ring, III

Dr. Harold W. Wolf

Executive Secretary:

Mr. Patrick Tobin

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I. Introduction

With the passage of the Safe Drinking Water Act, Public Law 93-523, on December 16, 1974, Congress created the National Drinking Water Advisory Council. This report summarizes the Council's activities for 1976. Included in this report is a review of the legislative mandate establishing the Council, specific functions of the Council, and a discussion of how the Council operates. Since Advisory Council meetings are open to the public, a listing is given of the various organizations that sent representatives to observe the Council meetings.

The Council has encouraged cooperation with other Federal, State and local governmental organizations and a summary is given of those organizations who discussed their activities before the Council. Several public organizations also gave presentations to the Council. These organizations are also listed.

Finally, following each meeting the Council made specific recommendations to the Administrator of the Environmental Protection Agency (EPA). A summary of the issues, the Council's recommendations, and EPA's reactions to these recommendations are included in this report.

II. Council Organization

The National Drinking Water Advisory Council is one of the few Federal advisory committees that is established by law. The Council composition and specific functions have been carefully formulated in the Safe Drinking Water Act. Following is discussion on the background of the Council and how it operated during its second year of existence.

A. Legislative Mandate

The National Drinking Water Advisory Council was created on December 16, 1974, pursuant to Section 1446 of the Safe Drinking Water Act, Public Law 93-523. The Council consists of fifteen (15) members appointed by the Administrator of the Environmental Protection Agency after consultation with the Secretary of Health, Education and Welfare. The membership includes five members from the general public, five members from State and local agencies, and five members of private organizations or groups demonstrating an active interest in the field of water hygiene and public water supply. In order to assure balance on the Council, the House of Representatives' Committee reviewing the Safe Drinking Water Act anticipated that the Administrator of EPA would include in his appointment

at least one representative from an environmental protection group, one consumer representative, one representative of State agencies regulating water service and prices, and one representative of industry engaging in underground injection. In addition, the Committee anticipated that some representation by the water supply industry would be provided on the National Council.

Each member of the Council holds office for a term of three years, except the terms of the members first taking office which expire as follows: five expire three years after the date of enactment of the Law, five expire two years after such date, and five expire one year after such date, as designated by the Administrator at the time of appointment.

B. Council Functions

The Council's functions are to advise, consult with, and make recommendations on a continuing basis to the Administrator of EPA on matters relating to the activities, functions and policies of the Agency under the Safe Drinking Water Act. EPA Order 1130.34, dated December 23, 1976, provides a charter and further delineates the functions of the Council. This Order states that the Council is to provide practical and independent advice to EPA on matters and policies relating to drinking water quality and hygiene, and is to maintain an awareness of developing issues and problems in the drinking water area. The Council is to review and advise the Administrator on regulations and guidelines that are required by the Safe Drinking Water Act; make recommendations concerning necessary special studies and research; recommend policies with respect to promulgation of drinking water standards; and assist in identifying emerging environmental or health problems related to potentially hazardous constituents in drinking water. The Council is to propose actions to encourage cooperation and communication between the Agency and other governmental agencies, interested groups, the general public, and technical associations and organizations on drinking water quality.

Mr. Russell Train in his opening remarks to the Council at their first meeting on February 26, 1975, expressed these thoughts as to the role of the Council:

"Your Charter calls, among other things, for practical and independent advice. The independent, certainly, is assumed for an advisory group. If you are not independent, then there is no point having you. Of course, independence always worries the people getting the advice as well. That is one of the risks of the advisory function.

"It is important, particularly in a new field such as this that we don't simply look at the issues and the implementation of their solution from any narrow perspective. We need a diversity of views and we need to have communication lines to all elements of our society who are concerned with this problem. That really is everybody. Not only the scientific community, the academic community but very importantly, the State and local governments and the communities themselves."

The role of the Council has developed during its first two years of existence and can be best stated as reported in the National Journal on June 12, 1976:

"...the general consensus of council members and of state officials is that EPA has used and has been guided by the council to the full extent that the law requires.

'EPA has done almost everything that the advisory council has asked it to do.' said a member of the council. 'When we said stop, they stopped, retrenched and revised their work...'

'If all of EPA's programs were run like this, it would be a marvelous improvement.' said Dr. Jay Lehr, also a council member. While acknowledging his possible 'naivete,' Lehr said, 'I frankly believe that this same system could be used for every other law that runs our lives.'

The director of EPA's office of regional and inter-governmental operations, Peter L. Cashman, a former Republican lieutenant governor of Connecticut (1973-75) said, 'When I first came to Washington, I was horrified at the prospect that governors wouldn't want to participate in the drinking water program. There was a good chance that they would say they had been in the water enforcement business for years and now EPA could take over the job.'

Cashman gave the 'major credit' for convincing 48 states to declare their intentions to assume primacy to the program's director, Victor J. Kimm, EPA's deputy assistant administrator for water supply, and to the advisory council. 'It's done everything that an advisory council is supposed to do,' he said. 'Ever since it was created, they've gotten into the guts of the law.' The council has been successful, he said, because of EPA administrator Train's 'full personal commitment' to the concept of the council and his attendance at all of its meetings. And also, he said, because the council has been told that it 'is an integral part of the drinking water program."

NATIONAL DRINKING WATER ADVISORY COUNCIL MEETING, AUGUST 1976

NATIONAL DRINKING WATER ADVISORY COUNCIL MEETING, AUGUST 1976

C. Council Members

After reviewing the qualifications of many recommended individuals and after consulting with the Secretary of the Department of Health, Education and Welfare, Mr. Russell Train, on February 26, 1975, appointed 15 members to the National Drinking Water Advisory Council with the initial term beginning December 16, 1974. A brief background of the 15 members and their terms of appointment are described in Appendix A.

On December 10, 1975, Mr. Train reappointed Mr. Garrett, Dr. Ingraham, Mr. Morris, Mr. Ralls, and Dr. Wolf for additional three year terms to expire December 15, 1978.

Reappointment of these five members was based upon the fact that the Council had just been operational for one year and a change in membership at the time may have drastically reduced the momentum and cohesiveness being developed by the Council.

Five Council members, Ms. Abbott, Dr. Beare, Dr. Christman, Dr. Hernandez, and Mr. Ongerth, completed their terms of appointment on December 16, 1976. All these members made outstanding contributions to the Council, however, EPA was of the opinion that this was an opportune time to introduce new ideas and perspectives to the Council. Therefore, the Administrator decided not to reappoint these members.

D. Council Meetings in 1976

During 1976, the Council held five meetings. The meeting dates and locations were:

Dates	Location
April 21-22, 1976	Washington, D.C.
July 7-8, 1976	San Francisco, California
August 25-26, 1976	Washington, D.C.
October 27-28, 1976	Boston, Massachusetts
December 15-16, 1976	Washington, D.C.

E. Structure of the Council

The Council nominated and Mr. Train appointed Mr. Charles C. Johnson, Jr. as Chairman during their first meeting in February 1975. Mr. Train asked Mr. Johnson to remain as Council Chairman during 1976 and 1977.

The Executive Secretary for the Council, a full-time EPA employee provides technical direction and ensures that the necessary administrative support for the Council is accomplished. This person serves as the liaison between the Council and EPA,

functions as the focal point for Council activities, develops policy issues to be discussed by the Council, and interfaces on behalf of the Council with Congressional offices, other Federal agencies, State programs and the general public. Mr. Patrick Tobin serves in this role.

To assist the Council in its activities, several sub-groups were established. The sub-groups are information gathering and evaluation teams examining the water supply areas of research, training, State programs, public affairs, demonstration grants, underground sources, primary regulations, and agenda for future Council meetings. Sub-group assignments were as follows:

NATIONAL DRINKING WATER ADVISORY COUNCIL

SUB-GROUPS

AGENDA

Ongerth/California
Rhinelander, Washington, DC
Graeser/Texas
Wolf/Texas*

RESEARCH

Christman/North Carolina*
Beare/Washington
Morris/Pennsylvania
Wolf/Texas

STATE PROGRAMS

Abbott/Nebraska
Ongerth/California
Beare/Washington*
Ring/New Jersey

PUBLIC AFFAIRS

Abbott/Nebraska*
Rhinelander/Washington, DC
Ring/New Jersey
Ralls/Michigan

PRIMARY REGULATIONS

Wolf/Texas
Ongerth/California*
Ingraham/New York
Christman/North Carolina

DEMONSTRATION GRANTS

Morris/Pennsylvania*
Ingraham/New York
Lehr/Ohio
Garrett/Missouri

TRAINING

Hernandez/New Mexico*
Rhinelander/Washington, DC
Garrett/Missouri
Graeser/Texas

UNDERGROUND SOURCES

Garrett/Missouri
Hernandez/New Mexico
Lehr/Ohio*
Graeser/Texas

*Denotes Sub-Group Chairperson

During 1976 sixteen sub-group meetings were held. In addition, Council members participated in public hearings on the proposed Underground Injection Control Regulations; attended special meetings on laboratory certification for State representatives; and for EPA regional staffs concerning State primacy; assisted in special affairs activities, such as making video tapes and slide presentations; and participated in the planning of an United Nations' Conference on Safe Drinking Water for the World.

The sub-groups are considered to be fact-finding or study panels. Their function is to bring the facts together and from these facts draw conclusions and/or alternatives to be considered by the Council. The Council discusses sub-group findings during regularly scheduled meetings. After reviewing the issues and reaching a consensus, the Council then makes its recommendations to the Administrator. These recommendations are summarized in a letter sent to the Administrator following each meeting. At the request of the House of Representatives Sub-committee on Health and the Environment, the Administrator forwards the Council recommendations to this House Sub-committee.

III. The Open Process

During 1976, the National Drinking Water Advisory Council worked diligently at encouraging public participation and observation at its meetings. Following are a few statistics which will give one a sense of public involvement in the Council activities:

- Over 325 individuals attended the five Council meetings in 1976 representing 106 different organizations and companies.

- Forty-three (43) different individuals addressed the Council at its meetings discussing a wide variety of topics ranging from carcinogens in drinking water to home water treatment devices.

- A mailing list of over 300 was developed for individuals and companies who requested information on the Council activities on a continuing basis.

- The Council responded to over 700 requests regarding information on its activities which resulted in the distribution of over 5,000 Council reports (includes the Annual Report, Summary Document, Sub-Group reports, etc.) to universities, private industry, environmental groups, Congress, and interested individuals.

- During 1976 each Council member received, reviewed, and studied over 400 pieces of information regarding safe drinking water.

- Two press releases were issued concerning the Council's activities.

- The activities of the Council have come under the scrutiny of two General Accounting Office studies. One study reviewing Federal Advisory Committee activities and the other study examining the implementation of the Safe Drinking Water Program. In addition, the Council activities were reviewed by an internal EPA study directed at improving the performance of all EPA's advisory committees.

At the request of the House of Representatives' Sub-Committee on Health and the Environment, the Council has attempted to encourage communication and cooperation between EPA and other governmental agencies, interest groups, the general public, and associations concerned with safe drinking water. Along with notices of meetings in the Federal Register and press releases, the Council solicits public participation in its meeting either through written or oral statements before or after each meeting. In addition, in developing the agenda for Council meetings, the Council attempts to schedule another Federal, State or local governmental agency to give a presentation and discussion of their activities and how they relate to EPA's responsibilities under the Safe Drinking Water Act.

A. The Public

The Council sets aside a portion of each meeting in order to be responsive to the needs of the public. During 1976 the Council listened to presentations and discussed issues with the following:

1. Polytechnic Institute of New York - Dr. Alan Molof

Dr. Alan Molof, Professor of Environmental Engineering, Polytechnic Institute of New York, expressed his concern over the proliferation of home water treatment devices and protection of the consumer from fraudulent manufacturing claims. Dr. Molof noted that no single Federal agency has the responsibility for registering all the devices currently on the market and suggested that the Office of Water Supply assume this role.

The Council discussed this issue and was concerned that the consumer might actually be receiving poorer quality water after a device is installed due to poor operation.

2. Los Angeles County Flood Control District - Mr. John Mitchell

Mr. John Mitchell, an engineer with the Los Angeles Flood Control District, expressed the District's concern regarding new initiatives and regulations being pursued under the Safe Drinking Water Act and the potential impact these may have on the District's groundwater recharge operations. The District asked to be kept informed and offered its technical data to assist in making a judgement on this issue.

3. Conference of County Environmental Health Directors - Mr. Henry Eich

Mr. Henry Eich, Chairman, Conference of County Environmental Health Directors, addressed the Council as to the potential role of the county environmental health officer in implementing the safe drinking water program. Lack of adequate staffing and local financial assistance were stated as two major problem areas facing the counties.

4. Oil & Gas Industry - Mr. Frank Wheeler

Mr. Frank Wheeler of Exxon Company, USA, Houston, Texas, representing the Texas Mid-Continent Oil and Gas Association, presented his industry's viewpoint regarding EPA's proposed Underground Injection Control Regulations. Because of the way the proposed Regulations were drafted, the Association believed the literal interpretation and enforcement of the Regulations will interfere with oil and gas production. Specific sections of the proposed Regulations were addressed with recommendations of possible revisions in order to make the Regulations more amenable to the oil and gas industry.

5. Sulphur Industry - Dr. James Miller

Dr. James Miller of the Freeport Sulphur Company, New Orleans, Louisiana, presented his company's concern regarding the proposed Underground Injection Congrol Regulations. The sulphur industry felt that the unique and specialized technical aspects of the Frasch sulphur industry may have been overlooked while drafting these Regulations. Several specific technical aspects were noted in the Regulations which would be impractical to enforce and would pose a potentially severe economic burden on the industry.

6. Atlantic Richfield Company Mr. Frank Freidman and Associates

Representatives from Atlantic Richfield Company discussed their company's solution mining process to recover uranium and the impact the proposed Underground Injection Control (UIC) Regulations will have on this operation. Speakers for Atlantic Richfield included Mr. Frank Freidman, an attorney with the company; Mr. Glenn Davis, manager of their uranium operations in Corpus Christi, Texas; Mr. Ed Reed, a consultant in hydrology; and Mr. Bob Hill, who is the environmental coordinator for the operation.

Atlantic Richfield Company representatives believed that the proposed UIC Regulations, as written, would prevent them from utilizing their solution mining process. They suggested that their type of mining operation be moved from Subpart C of the Regulations to some other sub-part and that the Regulations have more flexibility.

7. Geraghty and Miller, Incorporated - Dr. Olin Braids

Dr. Olin Braids from Geraghty and Miller, Inc., consulting groundwater hydrologists, addressed the Council concerning the nitrate standard for drinking water. Since the nitrate standard is no longer a recommended limit, but is prescribed as a maximum contaminant level in the Interim Primary Drinking Water Regulations, this standard will preclude many ground waters on Long Island to be used as sources of drinking water. Dr. Braids urged that when the standards are being revised, a critical analysis be given to the nitrate standard.

8. University of North Carolina - Dr. Daniel Okun

Dr. Daniel Okun, a Keenan Professor at the University of North Carolina, shared with the Council his views and concepts regarding water uses. His philosophy involves using the highest quality water sources for potable purposes while reusing wastewaters and lower quality water sources for other uses such as lawn sprinkling, power plant cooling waters, etc.

Dr. Okun also introduced the concept of regionalization to give small communities a greater ability to meet the provisions of the Safe Drinking Water Act.

B. Interface with Federal Governmental Agencies

1. Health Programs of the Department of Health, Education and Welfare

Substantive briefings were given to the Council by members of the Department of Health, Education and Welfare on their programs as related to EPA's activities under the Safe Drinking Water Act. Presentations were given by:

a. Center for Disease Control - Dr. Frank Lisella
b. National Cancer Institute - Dr. Herman Kraybill
c. Food and Drug Administration - Dr. Robert Angelotti
d. HEW Committee to Coordinate Toxicology and Related Programs - Dr. David Rall

Issues where EPA and DHEW had mutual responsibilities were discussed, such as interstate carriers, bottled drinking water, and health effects research, and how these efforts were being coordinated.

2. National Academy of Sciences

Mr. Ralph Wands and Dr. Wiley Housewright of the National Academy of Sciences briefed the Council regarding the Academy's contract with EPA. This work is to provide information on constituents in drinking water which may pose a potential health hazard and should be considered by EPA in developing the revised primary drinking water standards. Because the Safe Drinking Water Act was explicit in maintaining confidentiality in the Academy's work, no specific details or tentative conclusions could be discussed. However, the Academy stated that its progress was proceeding as planned.

3. Indian Health Service

Representatives from the Department of Health, Education and Welfare, Mr. William Pearson, Director of the Indian Health Service and Mr. Frank Schulte, Branch Chief with the Indian Health Service presented the Council with an overview of their program. The Indian Health Service has an extensive program for building water supply and wastewater facilities on Indian reservations. Operation and maintenance and operator training are important concerns required to keep these facilities in operation.

The Indian Health Service stressed that flexibility in the safe drinking water program is needed so that the water supplies on Indian lands can be upgraded in a reasonable manner.

C. Interface with State Governmental Agencies

1. Oregon - Mr. Arthur Goodman

Mr. Arthur Goodman, Assistant Administrator for Health, State of Oregon, shared with the Council some of the problems confronting Oregon before it can assume primary enforcement responsibility for the safe drinking water program. Legislative modification is necessary along with changes within the State to assure that each State agency has definitive jurisdictional responsibilities regarding safe drinking water.

2. Illinois - Mr. Ira Markwood

Mr. Ira Markwood, Director, Division of Public Water Supplies for the State of Illinois, explained that Illinois has divided authority regarding responsibility for water supplies. The State of Illinois' regulations are almost identical to the Interim Primary Drinking Water Regulations. However, Mr. Markwood states that Illinois will have to resolve as to which State agency has jurisdictional authority for the safe drinking water program before it will be able to assume primary enforcement responsibility.

3. Rhode Island - Mr. John Hagopein

Mr. John Hagopein, Water Supply Director for Rhode Island explained that this State has been experiencing difficulties in having their legislature modify their State legislation to meet the requirements of the Safe Drinking Water Act. The greatest problem of enforcement is anticipated to be the non-community public water supplies.

4. Connecticut - Mr. Richard Woodhull

Mr. Richard Woodhull, Director of Connecticut's Water Supply program indicated that about one-third of this State's population uses unfiltered surface water as its drinking water and it is questionable if these supplies will be able to meet the drinking water standards. Connecticut has adopted a regulation which becomes effective on June 1, 1977 and is tailored to the requirements of the Safe Drinking Water Act and will also meet Connecticut's needs.

5. Massachusetts - Mr. George Coogan

Mr. George Coogan, Director, Division of Water Supply for Massachusetts explained that two bills, submitted in early 1976, one on laboratory certification and one to change the State's operating authority for safe drinking water were defeated by the State Legislature.

The Massachusetts legislature may not act rapidly when these bills are resubmitted and consequently the State probably will not be able to assume primary enforcement responsibility on

June 24, 1977. In addition, because of State hiring policies, additional staff could not be hired during 1976 even though money was available through the initial EPA grant.

6. Vermont Mr. Kenneth Stone

Mr. Kenneth Stone, Chief of Sanitary Engineering for Vermont stated that since Vermont has many small communities, it will face difficulties both financial and manpower in to implement the Safe Drinking Water Act in these rural communities. Vermont indicated that it intends to assume primary enforcement responsibility if financial and legislative relief become available. The State of Vermont approves of the approach EPA has been taking to date and hopes that this interchange between EPA and the States will continue.

In addition, the Council also received a statement from Dr. Maurice Goddard explaining the reasons the State of Pennsylvania decided not to seek primary enforcement responsibilites for the safe drinking water program at this time. Reasons included a de-emphasis of environmental programs in the State, limited manpower, an apparent excessive amount of "red tape" associated with the program, and inadequate Federal funds to support a regulatory program.

IV. Issues, Council Recommendations and EPA Reactions

During 1976, the Council addressed a wide variety of safe drinking water issues and make specific recommendations to the Administrator of EPA on these issues. EPA's reactions to the Council's recommendations were positive for the most part. Following are some issues, Council recommendations and EPA reactions to the recommendations during the past year:

A. ISSUE: EPA's planned proposed Advance Notice of Proposed Rulemaking for the control of organic contaminants in drinking water.

A study completed by the National Cancer Institute showed that chloroform, an organic compound, induces the formation of cancerous tumors in rats and mice under laboratory conditions and at relatively high dosages. Chloroform was found in all the finished drinking waters in EPA's 80 city National Organics Reconnaissance Survey. The actual effect on humans from drinking water containing chloroform at very low levels for a long period of time is unknown. However, if in the Administrator's judgement there may be an adverse health effect to humans from chloroform and/or other organic compounds in drinking water, EPA is required by the Safe Drinking Water Act to establish regulatory options for these contaminants.

An Advance Notice of Proposed Rulemaking (ANPRM) is a first step available to a regulatory agency to solicit public comment on a planned regulatory action. The ANPRM generally outlines the problem facing the regulatory agency, discusses

regulatory options available, and may suggest the course of action that the Agency is planning. The primary purpose of the ANPRM is to solicit wide public comment at the front-end of a planned regulatory action.

At the request of the Administrator of EPA, the Council reviewed the planned ANPRM. In order to assist the Council in their evaluation of this document, the following representatives were invited in order to expressed the views of their organization:

1. American Water Works Association - Mr. Mike Davoust
2. Conference of State Sanitary Engineers - Mr. Oscar Adams
3. Public Health Representative - Dr. Sheldon Murphy, Harvard University
4. Environmental Defense Fund - Dr. Robert Harris
5. League of Women Voters - Ms Carol Jolly

The Council and the invited participants discussed in detail, the need, objectives, ramifications, and clarity of the Advance Notice of Proposed Rulemaking.

NOTE: A detailed review of these discussions is found in the National Drinking Water Advisory Council's Summary Document Number 1 entitled, "Discussion of EPA's Advance Notice of Proposed Rulemaking for the Control of Organics in Drinking Water," July 1976.

RECOMMENDATION: The Council was of the opinion that the ANPRM was a useful method to obtain public debate on this important issue. However, before the document was to be published, the Council recommended that it should be modified in order to include a clear delineation and justification as to why this is an important public health problem at this time, and why EPA is asking for input from the public to help it decide what kind of rules, regulations, procedures and voluntary actions it ought to be seeking. In addition, the document should include an explanation of the basis upon which standards could be set.

EPA REACTIONS: Based upon the discussions and recommendations resulting from the Council meeting, the Advance Notice of Proposed Rulemaking was rewritten. The health concerns were described in more detail and the entire document was restructured to be more understandable to the layman. The ANPRM was published in the Federal Register on July 16, 1976.

B. ISSUE: Health Risk Assessment for Organics in Drinking Water

In developing the rationale for establishing regulations, the Council wanted to gain an understanding of how a regulatory agency should judge an acceptable health risk for standard setting. To obtain a variety of opinions on this subject, the Council invited the following eminent scientists to share their views on this subject:

1. Dr. Joshua Lederberg - Stanford University Medical School

Dr. Joshua Lederberg, Nobel/laureate and Professor of Genetics at Stanford University Medical Center shared with the Council his thoughts concerning the relative health risk associated with organics in drinking water. In Dr. Lederberg's opinion, based upon current knowledge, setting a standard for organics in drinking water would provide only a marginal health benefit. The use of activated carbon in water treatment plants to reduce levels of organics may only provide a false security to the public and more knowledge is needed to determine if activated carbon in itself may be a potential pollutant.

Dr. Lederberg also expressed his concern regarding drinking water hardness and cardiovascular disease, stating that this may be a far greater health consequence.

2. Dr. Herbert Stokinger - National Institute of Occupational Safety and Health

Dr. Herbert Stokinger, a toxicologist with the National Institute of Occupational Safety and Health and formerly an advisor for the 1962 Drinking Water Standards shared with the Council his thoughts concerning toxicology and drinking water contaminants. Dr. Stokinger presented a case for biologic thresholds, particularly for substances with carcinogenic potential. Data were presented for several separate instances which indicated evidence that measurable and significant thresholds exist for carcinogens.

Dr. Stokinger also expressed concern of extrapolating animal data to man. In Dr. Stokinger's opinion, biologic events are not the same at low dosages as at high, the assumption made by data extrapolation. From the levels of chloroform currently found in drinking water, Dr. Stokinger found it difficult to believe that these concentrations constitute a serious hazard to health. However, he stated that drinking water standards are a must and can be developed using thresholds for health effects if due account for added safety factors is included.

3. Dr. Robert Tardiff - Environmental Research Laboratory, EPA, Cincinnati, Ohio

Dr. Robert Tardiff, a toxicologist with EPA's Cincinnati Environmental Research Laboratory expressed to the Council his assessment of the health risk associated with organics in drinking water. His research has concluded that 0 to 276 cancer deaths per year can be attributed to the presence of chloroform (an organic compound) in drinking water.

4. Dr. Sheldon Murphy - Harvard School of Public Health

Dr. Sheldon Murphy, Associate Professor of Toxicology at Harvard, indicated that his research study on the health risks of chloroform in drinking water indicated the cancer risk can

be from 0-40%. The serious question is when a risk assessment is made, what criteria is used to decide what is an acceptable risk to man.

5. Dr. Robert Harris - Environmental Defense Fund

Dr. Robert Harris, a technical staff representative, stated that is is not advisable to wait for a precise health risk assessment or health effects data before setting standards. The effect is irreversible and has a very long lag time. We should not gamble our future and should act now to remove potentially harmful contaminants from our drinking waters.

The Environmental Defense Fund suggested that a standard be based upon available technology taking costs, size of community, and other factors into account.

RECOMMENDATION: The Council brought to EPA's attention that little is known if there may be a potential health hazard from using granular activated carbon as a treatment control for organic chemicals in drinking water. Without this knowledge, a false security may be projected to the public.

In addition, the Council alerted EPA to Dr. Stokinger's case for biologic thresholds, particularly for substances with carcinogenic potential. Dr. Stokinger's data for several separate instances which indicated evidence that measurable and significant thresholds exist for carcinogens were forwarded to EPA. Also the Council were in agreement with Dr. Stokinger's opinion that the animal data for potentially carcinogenic materials should not be extrapolated to man because biologic events are not the same at low dosages as at high.

EPA REACTIONS: The Council information and concerns regarding the use of granular activated carbon and a possible threshold for chemical carcinogens was forwarded to EPA health effects research scientists for their review and consideration. On a separate occasion, EPA's Cancer Assessment Group stated that extrapolating animal carcinogenic data to man is tenuous and this methodology should not be used if at all possible.

C. ISSUE: Decision on Organics

Council discussions on the issue of organic contaminants in drinking water extended over a period of eight months. During this time the Council heard from a variety of health experts, toxicologists, consumer groups, the water utility industry, and state water supply directors. Based upon these discussions and many hours of careful analysis of this problem, the Council believed, in its limited understanding, that there was evidence

that organic chemicals and, in particular, chloroform in drinking water pose a health threat to the American public. On this basis of this conclusion, the Council offered the following recommendations in response to EPA's Advance Notice of Proposed Rulemaking for the control of organic chemicals in drinking water.

RECOMMENDATION: The first recommendation called for an intensive research program on the health risk associated with organic chemicals in drinking water. The Council heard conflicting opinions from eminent toxicologists whether there is or there is not a threshold for carcinogens. In general, the concept of a no threshold level for carcinogens had not been articulated to the general public so that its basis for regulatory action can be thoroughly understood. Therefore, the Council recommended that an aggressive research program be carried out to determine whether a threshold level does or does not exist for organic chemicals to cause human cancer. The results of this research could confirm or dispel the argument that organic chemicals found at drinking water concentration levels are below the human threshold level. The results of this research should be presented in a form which the layman can interpret and comprehend.

Secondly, since it appeared that a health hazard exists, the Council recommended that EPA move in the direction of establishing a maximum contaminant level (MCL) for the trihalomethane (THM) organic compounds found in drinking water. Trihalomethane compounds were selected because they are an indicator group of organic chemicals which includes chloroform. In the recent EPA 113-city organic survey, the trihalomethane compounds were found to be the most prevalent of the organic chemicals and thus they appear to be a logical choice of organic compounds to start to regulate. The standard for THM should be set so as to provide the maximum protection to the health of persons within an acceptable level of risk. Because some of the available technology for reducing THM may necessitate relatively longer capital investments for smaller water supply systems, a phased program for implementing the standard may have to be considered.

Finally, the Council recommended that EPA delay on establishing this standard until they have received the benefit of the National Academy of Sciences' recommendations on the health aspects of contaminants in drinking water. Since this report would be due by March 1977, EPA would then be able to move forward at that time with the best scientific information available.

EPA REACTIONS: At the writing of this report, EPA stated that they would have available the National Academy of Sciences' report before a standard for the trihalomethanes is proposed. A phased implementation approach is being prepared by EPA. This regulatory approach will be directed at large municipal systems first, taking under consideration the severity of the problem, and capital and operating costs to meet the standards.

The research efforts on organic chemicals were intensified and possible thresholds for carcinogens are being investigated on a continuing basis.

D. ISSUE: Water Supply Public Affairs Activities

The Council had been very critical about the lack of an EPA water supply public affairs activity. The Council hoped that public education and informational materials would be developed in a language that people could understand, and would be widely disseminated so that the public could be made aware of their role and responsibility in the effort to supply safe water. To further this and other concerns in public affairs, a sub-group was established within the Council.

RECOMMENDATION: The Council reiterated its concern about the apparent inadequacy of the water supply public information program. Although the Council felt that EPA had developed a basically sound public information strategy, concern was expressed that dedicated manpower and funds may not be available to successfully implement this very important aspect of the program. The Council suggested that radio be considered as a media to reach rural America on the aspects of the Safe Drinking Water Act and that work begin concerning informing the public as to the public notification aspects of the Interim Primary Drinking Water Regulations.

EPA REACTIONS: Based upon the Council recommendations, EPA's Office of Public Affairs assigned one individual to help support the Office of Water Supply, while the Office of Water Supply began to hire individuals to work on water supply public affairs activities. To reach the public concerning the Safe Drinking Water Act, a grant was awarded to the League of Women Voters to develop a pilot safe drinking water program in ten States where primary enforcement responsibility appeared to be critical. A contract was awarded to Connecticut Television to develop a documentary film on water supply and to release it over the educational television networks. A series of brochures and pamphlets describing the Safe Drinking Water Act were developed. In addition, a video tape presentation involving Betty Abbott, a Council member, was produced and was to be directed toward local elected officials so that they could understand the Safe Drinking Water Act and its implications.

E. ISSUE: State Programs

To ensure the successful implementation of the safe drinking water program, the assumption of primary enforcement responsibility by the States is critical. The Council viewed this item as a major concern for the EPA.

RECOMMENDATION: The Council, through the auspicious of the Association of State and Territorial Health Officers and the Conference of State Sanitary Engineers, had developed a questionnaire in order to obtain first hand information concerning the views of the States regarding the implementation of the Safe Drinking Water Act. The Council also shared information with six States (Oregon, Illinois, Vermont, Massachusetts, Rhode Island and Connecticut) at the Council meetings. Seventy percent of the States foresaw problems with implementation. Concerns ranged from insufficient funds; recruiting and training problems, to securing new legislative authority. Many States foresaw enforcement, i.e., civil penalties, as a major difficulty. The Council believed that there were serious problems which should be resolved in order for the States to assume primary enforcement responsibility. The Council's report on the States' capabilities to assume primacy is attached as Appendix B.

EPA REACTIONS: The information contained in the Council's report confirmed many of the concerns that the Office of Water Supply had anticipated. To inform the States as to the primacy requirements and the primary concerns which the States should be dealing with, EPA conducted extensive meetings with the State water supply directors in January 1977.

F. ISSUE: Proposed Underground Injection Control (UIC) Regulations

The proposed UIC Regulations had received careful scrutiny by the Council during 1975 and this oversight continued in 1976. Several industries, including the oil and gas industry, have voiced their concern regarding the impact of these Regulations on energy production and the apparent excessive amount of "red tape" to be involved in complying with the proposed requirements.

RECOMMENDATION: These Regulations continued to be of concern to the Council during 1976. In particular, those specific sections of the proposed Regulations which deal with existing oil, gas, and certain mining operations, the Council brought to the attention of the Administrator. It was the Council's concern that their experience and knowledge on this subject was not apparently considered as these Regulations were developed. The Council recommended that EPA reevaluate those portions of the Regulations and work with the Council's Sub-Group on Underground Sources so that potential criticisms and inconsistencies can be precluded before these Regulations are promulgated.

EPA REACTIONS: In response to these concerns and other concerns expressed by the public, EPA extended the public comment period for an additional 60 days so that there was ample opportunity for all interested parties to notify EPA as to their reactions to these proposed Regulations. The Council's concerns, along with the public responses, are being used to modify these Regulations.

G. ISSUE: Research Strategy

For one and one-half years, the Council had been working with EPA's water supply research staff on the development of a sound and understandable research strategy. The Council was of the opinion that this document was essential in order to relate the current and planned research with the overall goals of the Agency.

RECOMMENDATION: During 1976 the Council's Research Subgroup worked with the EPA research staff, offered suggestions of what a research strategy document should contain, and made constructive criticisms of the various draft documents. In December 1976, the Council informed the Administrator that the following several revisions, a research strategy document had been prepared, in which the Council concurred.

EPA REACTIONS: The water supply research strategy document is now available for wide distribution. Future EPA sponsored research will be developed based upon this overall strategy.

H. ISSUE: Quality Assurance

In 1975, the Council noted that a sound quality assurance program was needed to ensure compliance with the maximum contaminant levels as required in the Interim Primary Drinking Water Regulations. EPA began developing a laboratory certification program. Concerns involved if the laboratory certification program would be guidance or regulations, how it should be implemented, and what are the capabilities of the States to carry out this program.

RECOMMENDATION: The strategy to implement a national laboratory certification program was reviewed by the Council. The Council was pleased with the rapid progress concerning the development of the laboratory certification manual and plans. For state certification, the Council recommended that an interim approval period until September 1977 be adopted with certification beginning under the revised Regulations. This method should stimulate an orderly evolution aimed at full certification of most laboratories by 1979. For local laboratory approvals,

the Council recommended a State administrative approval using the criteria and procedures manual or state equivalent standards as approval standards. Final certification would begin after the permanent regulations are in effect and would be completed by March 1979. The Council also recommended that the Federal regulations permit reciprocity agreements among States with federally approved programs, but not require such agreements.

In addition, the Council surveyed the States regarding their laboratory capabilities (see Appendix C).

EPA REACTIONS: Guidelines were developed for laboratory certification and the Council's recommendations were considered and most were incorporated. A final draft of the laboratory certification guidelines was completed on December 29, 1976. EPA plans to publish the proposed guidelines in order to solicit public comment early in 1977.

I. ISSUE: Proposed Secondary Drinking Water Regulations

As mandated by the Safe Drinking Water Act, Secondary Drinking Water Regulations are to be promulgated to enhance the aesthetic quality of drinking water. Contaminants to be designated, monitoring frequency, and economic impact were items of prime concern.

RECOMMENDATION: Since these Regulations will only be in the form of guidelines to the States, the Council offered several suggestions to make the guidance more positive in its approach. The Council suggested that this document should strive to encourage and support State action for the improvement of aesthetic water quality. The Secondary Maximum Contaminant Levels (consumer acceptance limits) should be modified to contain a recommended, an upper, and a short term limit. These levels are described in Appendix D.

EPA REACTIONS: Based upon the Council recommendations, EPA redrafted the proposed Secondary Drinking Water Regulations. These Regulations are expected to be published in the Federal Register in the Spring of 1977.

J. ISSUE: Modifications to the Safe Drinking Water Act

During its two years of existence, the Council has disucssed several ways the Safe Drinking Water Act could be improved.

<u>RECOMMENDATION</u>: The Council met with Mr. Jeffrey Schwartz, a staff member on the House of Representatives Interstate and Foreign Commerce Committee. This Committee has primary responsibility for the Safe Drinking Water Act. The Council discussed with Mr. Schwartz several possible amendments and changes to the Act which should be considered as this legislation comes under review in early 1977. The Council was of the opinion that only technical amendments should be considered at this time in order to assure continued legislative authority. The Council offered the following recommendations for consideration as possible changes to the Act:

1. Section 1413, State Primary Enforcement Responsibility

This section should be modified to grant States time extensions in order to assume primacy. A legislative remedy might be to give the Administrator the authority to review a State program at the end of one year, evaluate the degree of progress and commitment to the program, and to grant an additional year's extension.

2. Section 1443, Grants to State Programs

It is proposed that additional grants may be made to States for an additional year when (1) the State has filed an official intent to seek primacy; and (2) where satisfactory progress has been made by the State to meet the requirements for assumption or maintenance of primary enforcement responsibility.

In addition, instead of having a fixed level of state grant appropriations, these levels should be determined on best estimates by EPA's studies of the States' requirements in meeting standards in accordance with the phased implementation program guidance adopted by EPA.

3. Section 1442, Training

This section should be rewritten in stronger legislative language in order to support operator training, state and local training, and professional training.

The Council planned to have a designated representative testify at the upcoming Congressional oversight hearings on the Safe Drinking Water Act in order to express the Council's views on this subject.

EPA REACTIONS: EPA plans to consider the Council's recommendations as it develops suggested amendments and/or changes to the Safe Drinking Water Act.

V. Public Attendance At Council Meetings

Pursuant to Public Law 92-483, the Federal Advisory Committee Act, the National Drinking Water Advisory Council meetings are open to the public and have attracted a broad segment of the general public. Following is a list of some of the organizations that sent representatives to the Council meetings during 1976:

A. Private Companies

Lever Brothers
Hach Chemical Company
Diamond Shamrock Corporation
Shell Oil Company
American Cyanamid Company
Water Refining Company
Government Research Corporation
Nalco Environmental Sciences
FMC Corporation
Culligan International
Celanese Chemical Company
Calgon Corporation
Union Carbide Corporation
Mobil Oil Corporation
Interpace Corporation
Electrolux Corporation
Stauffer Chemical Company
Point-of-Use Water Industries
Cabot Corporation
Kerr-McGee Corporation
ASARCO Incorporation
UCI United States
Energy Resources Corporation
Hooker Chemical Company
Foremost Foods Company
Kaiser Aluminum and Chemical Corpration
Chevron Chemical Company
Northern National Gas Company
Olin Corporation
Betz Corporation
American Petroleum Institute
Nipro, Incorporated
RMI, Inc.
Temple, Barker & Sloane

Freeport Sulphur Company
DuPont Company
Western Electric
Phillips Petroleum Company
Interdevelopment Corporation
Geraghty & Miller, Inc.
Celanese Corporation
Exxon Incorporated
Rohm & Haas Company
Owens Corporation
DXM Company
Whitman & Howard, Inc.
Kennecott Cooper Corporation
Atlantic Richfield Company
Cleary, Gottlich, Steen & Hamilton
Proctor & Gamble Company

B. Public Interest Groups

League of Women Voters
Montgomery County Civic Federation
Environmental Defense Fund
California State Department of Consumer Affairs
League of Women Voters of California
League of Women Voters of Bay Area
League of Women Voters, New Hampshire

C. Federal Agencies

Extension Service, USDA
National Bureau of Standards
Department of the Army
Indian Health Service
General Accounting Office
National Academy of Sciences
National Cancer Institute
Communicable Disease Center
Department of Health, Education and Welfare
National Institute of Environmental Health Sciences

D. State and Local Agencies

Illinois, Environmental Protection Agency
Maryland Health Department
Metropolitan Water District of Southern California
Coochella Valley County Water District, California
Los Angeles County Flood Control District
State Water Resources Control Board, California
Oregon State Health Department
California Department of Health

San Mateo County, Office of Environmental Health
San Francisco Environmental Health Department
East Bay Municipal Utility District, Oakland
Vermont Department of Health
Rhode Island Health Department
Division of Water Supply, Massachusetts
Massachusetts Department of Environmental Engineering
New Hampshire Water Supply & Pollution Control Comm.
Philadelphia Water Department

E. Associations and Others

Water & Wastewater Equipment Manufacturers Association
Salt Institute
Trends Publishing
American City & County Magazine
Water Quality Administration
BNA, Environment Reporter
American Water Works Association
Polytechnic Institute of New York
Public Technology, Inc.
Business Publishers, Inc.
Harvard University
British Embassy
Environmental Health Letter
Stanford University
American Mining Congress
National Lime Association
American Bottled Water Association
NEA, Washington
Conference of State Sanitary Engineers

VI. Overall Assessment

The Council believes that its efforts during Calendar Year 1976 have been productive and its work output has been useful to the progress of EPA's safe drinking water program. The Council is enheartened by the comments made by Mr. John Quarles, EPA's Deputy Administrator, to the Council at its December 16, 1976 meeting:

"...I think it is appropriate to just comment briefly on how much we have appreciated the work that has been done by this entire committee.

"I would hope that all of you have got an extremely high sense of satisfaction from your participation on this committee. I do not think I have every heard of an advisory committee that has been more productive in the sense of actually having an influence over the way a Federal program has developed and actually functioning in such a manner that your time has been constructively productive.

"You have been productive not only in the help you have given us in the Drinking Water Program but I think that the Drinking Water Program and this committee have had an effect on the entire course of development of the Environmental Protection Agency.

"The degree of satisfaction with the way this program has evolved and the way this advisory commiteee has worked have had a lot of influence extending beyond this program...

"...the success that you have had has served as a model and has helped EPA in our approach to our work, this is spreading to the Water Pollution Program, particularly in our 208 program -- it is spreading to the Air Pollution Program more and more.

"I think it is becoming imbedded in the working philosophy of people throughout the agency in their approach to programs and I am convinced this is just invaluable for the future of the environmental cause..."

ACKNOWLEDGEMENT

The Council would like to acknowledge the work and support provided by Ms. Charlene Shaw, Office of Water Supply, Environmental Protection Agency. The administrative assistance, typing support, and meeting arrangements conducted by Ms. Shaw has been invaluable to the success of the Council and the Council wishes to acknowledge her valuable contributions.

FOR MORE INFORMATION

For additional information on the Council, please contact:

Mr. Patrick Tobin
Executive Secretary for the National Drinking Water Advisory Council
Office of Water Supply (WH-550)
Environmental Protection Agency
Washington, D.C. 20460

APPENDIX A

NATIONAL DRINKING WATER ADVISORY COUNCIL

1. Betty Abbott Term: 12-15-76
Omaha/Douglas Civic Center
1819 Farnum Street
Omaha, Nebraska 68102

Ms. Betty Abbott is a member of the Omaha City Council, member/past Chairman Nebraska Environmental Control Council, on the Board of Directors, National League of Cities and the League's Steering Committee on Environmental Quality. She is active in the League of Women Voters and local health and environmental matters. Awards include Clean Air Award, American Lung Association, Business and Professional "Woman of the Year," and Region VII, International Women's Year, "Environment Award."

2. John Beare, M.D. Term: 12-15-76
Director, Health Services
Division, Department of
Social and Health Service
P.O. Box 1788 (Mail Stop 444)
Olympia, Washington 98504

Dr. Beare earned a Bachelor of Sciences degree at Seattle Pacific College, a Doctor of Medicine from the University of Oregon Medical School and a Masters in Public Health from the University of California School of Public Health. Since 1964 he has held various positions with Washington State. He was Acting Assistant Secretary, Health Services Division just prior to becoming Director of the Health Services Division for Washington State.

3. Russell F. Christman, Ph.D. Term: 12-15-76
Chairman, Department of Environmental Sciences & Engineering
School of Public Health
University of North Carolina
Chapel Hill, North Carolina 27514

Dr. Christman was awarded a Ph.D. in Chemistry from the University of Florida in 1962. His professional interests includes an understanding of natural product organic materials in water and methods of organic analyses in water samples. Dr. Christman is currently the Chairman, Department of Environmental Sciences and Engineering, School of Public Health, University of North Carolina.

4. Mr. Jack T. Garrett
Manager, Pollution Abatement
and Industrial Hygiene
Medical Department
Monsanto Company
800 North Lindberg Boulevard
St. Louis, Missouri 63166

Term: 12-15-75
Reappointed: 12-15-78

Mr. Garrett attended Oklahoma State University, earning a Bachelor of Sciences in Chemistry in 1948 and a Masters degree in Chemistry from the University of Tennessee in 1949. During Mr. Garrett's long association with Monsanto (from 1950 to present) he has been actively involved in plant pollution and industrial hygiene. He is the author of numerous technical publications and is a member of various technical and trade associations as well as industry committees.

5. Mr. Henry J. Graeser
Black & Veatch Consulting
Engineers
555 Griffin Square
Dallas, Texas 75202

Term: 12-15-77

Mr. Graeser has had experience with a State health department, the U.S. Army Sanitary Corps and was Director, Water Utilities Department, Dallas, Texas. He has received the American Public Works Association "Top Ten Public Works Men of the Year" Award, AWWA Distinguished Public Service Award and has been selected Engineer of the Year in Texas. He is a member of many professional and administrative practice committees. He is clearly recognized as a leader in the water supply field.

6. John W. Hernandez, Jr., Ph.D.
Dean, Civil Engineering Department
New Mexico State University
P.O.Box 8196
Las Cruces, New Mexico 88003

Term: 12-15-76

Dr. Hernandez was awarded the Ph.D. in Water Resources from Harvard in 1965. He was the engineer responsible for the water pollution control program for New Mexico, 1957-1962. He has been Director, Environmental Institute, New Mexico State University. He has served as delegate to White House Conferences on the Aging; and on many national, state and regional boards and committees. He is a member of several professional organizations.

7. Hollis S. Ingraham, M.D. Term: 12-15-75
Former Commissioner of Health Reappointed: 12-15-78
New York
291 McCormack Road
Slingerlands, New York 12159

Dr. Ingraham retired January 16, 1974 as Commissioner of Health, New York State. Dr. Ingraham has served as President of the Association of State Territorial Health Officers, Chairman of the Executive Committee of the National Health Council and member of the Governing Council of APHA. He was a member of the EPA Advisory Committee on the Revision of the Drinking Water Standards.

8. Charles C. Johnson, Jr. Term: 12-15-77
Resident Manager
Malcolm Pirnie, Inc.
1629 K Street, N.W.
Washington, D.C. 20006

Mr. Johnson has had a distinguished career over the past 25 years, progressing from a PHS staff engineer to Administrator, Consumer Protection and Environmental Health Service, DHEW. After retirement as Assistant Surgeon General, PHS, he became Associate Executive Director, American Public Health Association; the Vice President of Research and Development, Washington Technial Institute. He is a Diplomate, American Academy of Environmental Engineers; former Commissioner of the National Capital Planning Commission; and a member of Stanford and Purdue University Engineering Advisory Councils.

9. Dr. Jay H. Lehr Term: 12-15-77
Executive Director
National Water Well Association
500 West Wilson Bridge Road
Room 135
Worthington, Ohio 43085

Dr. Lehr is Executive Director of the National Water Well Association which has vigorously supported water supply legislation. NWWA is involved in the supply of underground water to more than one-half of the Nation's population. Dr. Lehr. is a 1957 graduate of Princeton University with a degree in geoogical engineering and received the Nation's first Ph.D. in hydrology from the University of Arizona in 1962. He has been a professor of groundwater hydrology at both the University of Arizona and Ohio State University and has authored over 50 scientific articles and two major text books on water well technology.

10. Walter K. Morris
Vice President
Gannett Fleming Corddry
and Carpenter, Inc.
P.O. Box 1963
Harrisburg, Pennsylvania 17105

Term: 12-15-75
Reappointed: 12-15-78

Mr. Morris was the AWWA "Water Utility Man of the Year" in 1972. He is a member of the Steering Committee, AWWA Research Foundation and has written several technical papers. He was President of the AWWA; and a Diplomate, American Academy of Environmental Engineers.

11. Henry J. Ongerth
Chief, Bureau of Sanitary
Engineering
California Department of
Public Health
2151 Berkeley Way
Berkeley, California 94707

Term: 12-15-76

Mr. Ongerth is regarded by many as the dean of public health engineers, spanning the time from swift quarantine of isolated outbreaks to the complex environmental problems of today. His list of awards and committee memberships is to lengthy to include here. He was Chairman of the Advisory Committee on the Revision of the Drinking Water Standards.

12. William R. Ralls
Commissioner
Michigan Public Service
Commission
6545 Mercantile Way
P.O. Box 30221
Lansing, Michigan 48909

Term: 12-15-75
Reappointed: 12-15-78

Mr. Ralls is a member of the National Association of Regulatory Utility Commissioners. NARWC is the national organization of State agencies which regulates water service and prices. Mr. Ralls is a Commissioner of the Michigan Public Service Commission. He is a graduate of Yale University magna cum laude and Harvard Law School.

13. Mrs. Jeanne Rhinelander Term: 12-15-77
Concern, Inc.
2233 Wisconsin Avenue, N.W.
Washington, D.C. 20007

Mrs. Rhinelander is a leader in Concern, Inc., a Washington, D.C. organization dealing with environmental matters. She is active in arranging local TV and other news coverage and is writing a lay persons guide to water supply. She is also active in the League of Women Voters.

14. Chester A. Ring, III Term: 12-15-77
Vice President - Operations
Elizabethtown Water Company
One Elizabeth Plaza
Elizabeth, New Jersey 07212

Mr. Ring is a director of the National Association of Water Companies and the Water Resources Association of the Delaware River Basin. He is a member of the State Licensing Board for Water Works and is the President of AWWA for 1976-77.

15. Dr. Harold W. Wolf Term: 12-15-75
Civil Engineering Building Reappointed: 12-15-78
Room 202
Texas A&M University
College Station, Texas 77843

Dr. Wolf is a professor of Civil Engineering and Director of the Environmental Engineering Division, Civil Engineering Department, Texas A&M University. He is the author of numerous publications, including books, reports, and journal articles. Dr. Wolf attended the State University of Iowa where he earned a Bachelor of Sciences in Civil Engineering and a Masters Degree in Sanitary Engineering and Hygiene. He was awarded a Doctorate in Environmental Health from the University of California at Los Angeles in 1965.

APPENDIX B

SURVEY OF STATES CAPABILITIES TO ASSUME PRIMACY

IMPLEMENTATION OF THE SAFE DRINKING WATER ACT
A SUMMARY OF STATE RESPONSES

August 1, 1976

The following is a summary of state responses to a questionnaire developed by the Association of State and Territorial Health Officers, and the Conference of State Sanitary Engineers, in order to obtain current information concerning the views of the states on questions related to implementation of the Safe Drinking Water Act. The questionnaire was sent to all jurisdictions affected by the Act, including the 50 states, the Virgin Islands, Puerto Rico, the District of Columbia, Guam, American Samoa, and the Trust Territories. Responses were received from four of these six special jurisdictions and from 45 of the 50 states. Total response was 88%, representing approximately this same proportion of the population. The state responses have been analyzed from a national perspective as well as grouped by EPA regions.

Summary

Seventy percent of the states see problems with implementation, although there is considerable uncertainty of what lies ahead in a number of areas. Perhaps thae greatest area of uncertainty is in how EPA intends to implement the program. Most are apparently willing to accept EPA's pledge for a phased approach - "one step at a time." Others are not so sure. They have heard it all before in other programs. Nevertheless, all but two states have indicated their intent to participate, at least for now. Several have plainly told EPA they will get out if a sizeable gap develops between program requirements and funding provided.

A chief concern of the states is that the present level of funding is insufficient to achieve full compliance with the Act. They do not believe state funds will be increased significantly and they wonder whether EPA program grants will be increased, or even continued, and at what level. Some states feel they cannot or will not increase current staff without such assurance.

Recruiting, training, and deploying numbers of new staff in a short time is seen as a sizeable problem, especially in view of budgetary or legislative restrictions, cumbersome civil service procedures, non-competitive salaries.

Securing new legislation prior to June 1977 is a problem for many states, especially if EPA insists that state legislation is closely aligned with the Safe Drinking Water Act. A number of states question whether state legislatures will grant authority for civil penalties approaching those contained in the Act.

Many states question the usefulness of this method of enforcement in any case. Enforcement is seen as a major difficulty. By far the greatest enforcement problem is anticipated with the small community and non-community systems.

The states express serious reservations over the effectiveness and feasibility of public notification, but seem willing to give it a try. Variance and exemption provisions are seen as overly complicated, which may limit their usefulness. Uncertainty remains with data requirements and laboratory certification, but these are viewed as generally manageable areas.

State Responses

Question: Has your state submitted a letter of intent concerning state primacy in accordance with provisions of PL 93-523?

Only two jurisdictions (Indiana and Pennsylvania) have indicated to EPA their intent not to participate at the present time. Several states indicated their awareness of the option to cancel primacy on 90 days notice, and announced their intent to do so if a substantial gap develops between available funds and the cost of an acceptable program. The two states declining to participate apparently intend to continue their current water supply programs. Both states responded to the questionnaire and their responses are included in the summary and tabulation.

Do you anticipate any difficulties in assuming primary enforcement authority?

Yes - 34 (69%) This question had an obvious degree of subjectivity. Also, many responses reflected uncertainty over various program requirements and the degree of difficulty which will be encountered in meeting these.

Do you foresee problems of staffing within your agency?

Yes - 36 (73%) Some of the problems cited were difficulties in creating new positions because of restrictions by state legislatures, budget agencies, etc.; the drain on existing staff from employment of numbers of inexperienced personnel; non-competitive salary levels; space problems related to new staff; and, the difficulty of recruiting (or even securing internal approval to hire) new staff with federal funds without some assurance of continued funding.

Do you need legislative changes in order to assume primacy?

Yes - 32 (65%) Not all of those indicating a need for legislative changes feel this will be a major problem. Several states indicated disagreement with EPA concerning the adequacy of existing statutes. Several states have already adopted new legislation, although in one case EPA was critical of the new statute. Timing is a difficult problem for states whose legislatures meet biennially. In some cases, this will preclude the adoption of new legislation by June 1977. One of the chief concerns expressed was a reluctance to seek and use, and a similar reluctance on the part of legislatures to grant, sizeable civil penalties as included in the Act. Those states expressing an opinion do not seem to feel that civil penalties will be a very useful or effective means of enforcement, either with municipal systems or with smaller community or non-community systems.

Do you foresee problems attaining necessary laboratory resources by the date needed?

Yes - 19 (39%) The majority of states do not see this as a major problem. Comments expressed here included: out-of-state laboratories may be used for more difficult analyses (organics, radiological, etc.); no space for laboratory expansion; short time frame for gearing up prior to June 1977; uncertainty of EPA certification requirements; bacteriological availability in outlying areas of states. Several states indicated they were starting fees for lab service, and felt this would be helpful in providing needed lab resources.

Do you foresee problems with financial resources?

Yes 31 (63%) A number of states have made estimates of program needs based either on EPA's estimated program costs, or other similar criteria. Estimates were usually two or three or more times the levels of funding for FY 77. Other states expressed general feelings that the cost of implementation would be considerably in excess of current levels of funding. Several states felt that the available funding would be enough to obtain compliance from community systems, but not for the numerous non-community systems. Very few, if any, states believe there will be significant increases in state funding for this program.

Do you anticipate difficulties in data collection and processing?

Yes - 25 (51%) Most states feel this is a manageable problem, although many of them question whether the ADP systems required to develop needed data will be ready at the dates prescribed by the EPA regulations. Several states indicated awareness that EPA is trying to help by developing data programs, but were doubtful how much this would help over the short term. Data management seems to be less of a problem with the smaller states.

Do you foresee problems with public notification?

Yes - 27 (55%) Many questions and doubts were expressed regarding public notification: that it is a new untried activity; the reaction by water purveyors and the public is unknown; cooperation, especially from small systems, is anticipated to be difficult; public reaction may be adverse or apathetic.

Do you foresee problems with variances and exemptions?

Yes - 25 (51%) Those commenting were in agreement that the system provided is cumbersome, that it is essentially unproductive and may be largely unnecessary. Other comments were that the 1981 deadline for exemptions will come too soon for some systems, that there is uncertainty how many systems will need exemptions. Some states will need to adopt new regulations and/or statutes to cover this area and this may not be possible by June 1977.

Do you foresee problems with enforcement?

Yes - 30 (61%) The prevailing feeling expressed was that compliance by water utilities needing significant improvements would be slow in coming regardless of enforcement effort applied, that the important factors in achieving compliance are understanding and acceptance by the utilities as well as their financial situation. Enforcement with small systems is seen as a particularly difficult problem because of the number and condition of those systems.

Do you foresee any other problems?

A variety of comments were made here. Some of the representative ones are included as follows:

"Help!" "It is going to be a paper blizzard." Implementation will probably come, but more slowly than the law and regulations stipulate (this will be no different than PL 92-500). Training, certification and technical assistance will be important perhaps more so than variances, exemptions, compliance schedules, etc. Small systems particularly may need financial assistance for capital improvements. It will be important to prioritize implementation since the total resource available will be insufficient to do everything at once. Rules and requirements should be cost-effective. Changes in program direction or requirements should be made deliberately with adequate notice and involvement of the states. "Don't let it be like the pollution programs."

Do you expect to have difficulty achieving compliance with the Primary Drinking Water Regulations in your state? for all systems? smaller community systems? non-community systems?

The great majority of states believe that the larger community water systems, with which they are familiar, will not present major obstacles in achieving compliance. However, 70% believe that smaller community systems and non-community systems will present difficulties in terms of becoming informed of the requirements, the cost of monitoring and treatment facilities, and the time needed to achieve compliance.

Regional Tabulation

Table I is a tabulation of state responses grouped by EPA region. The small size of the sample obscures any but very obvious regional differences. For instance, provision of laboratory resources is a much greater problem in Region IX than in Region III. This is readily understandable in terms of factors of distance and population density. Such other differences as are detectable seem to result from similar factors.

TABLE I.

SUMMARY OF STATE RESPONSES TABULATED BY EPA REGION

REGION	STATES & OTHER JURISDICTIONS	NUMBER RESPONDING	INTEND TO SEEK PRIMACY	DIFFICULTIES IN ASSUMING PRIMACY?		PROBLEMS FORESEEN								DIFFICULTY OF ENFORCEMENT		
				YES	NO	STAFF	LEGIS.	LAB	FINANCES	DATA	PUBLIC NOTIF.	VAR. & EXEMPT.	ENFORCEMENT	ALL SYSTEMS	NON-COMM.	SMALL COMM.
I.	6	6	6	3	3	3	4	2	3	4	1	1	2	0	4	3
I.	4	3	3	1	2	2	1	2	2	2	3	2	1	0	2	2
I.	6	6	5	5	1	3	4	0	3	2	2	2	3	0	2	3
V.	8	4	4	3	1	4	3	2	4	1	4	3	2	0	3	2
V.	6	6	5	5	1	5	5	3	5	5	4	2	5	0	6	5
I.	5	4	4	3	1	4	1	1	2	2	3	2	3	0	3	3
I.	4	4	4	3	1	4	2	1	2	3	3	3	4	0	3	2
I.	6	6	6	2	4	4	5	2	4	2	4	3	3	1	4	5
X.	7	6	6	6	0	4	5	5	4	2	2	4	4	2	3	5
X.	4	4	4	3	1	3	2	1	2	2	1	3	3	0	4	4
AL	56	49	*47	34	15	36	32	19	31	25	27	25	30	3	34	34

Only two jurisdictions known to be not participating.

APPENDIX C

SURVEY OF LABORATORY CAPABILITIES IN THE STATES

QUESTIONNAIRE SUMMARY REGARDING STATUS OF LABORATORY CAPABILITIES IN SUPPORT OF THE SAFE DRINKING WATER ACT REQUIREMENTS

October 18, 1976

The following is a summary of a questionnaire sent from the Association of State and Territorial Health Officers to all jurisdictions affected by the Safe Drinking Water Act. These included the 50 states, the Virgin Islands, Puerto Rico, the District of Columbia, Guam, American Samoa, and the Trust Territories. Responses were received from 40 states and four special jurisdictions, providing a 79% return. The tabulations combine the information from the special jurisdictions with that from the states, and the discussions include both under the term "states." Three states reported they were not seeking primacy and, therefore, did not provide answers to the other questions. Tabulations were made on a base of 41 replies. Percentages were computed using the actual number of answers to each question, since specific information was not provided in some instances. Percentages may total 101 or only 99 due to rounding off each individually calculated percent.

BASIC INFORMATION

Although not a laboratory responsibility, the first two questions dealt with states seeking primacy for administering and enforcing the requirements of the Safe Drinking Water Act. They were included in this questionnaire because they relate to the appropriateness of providing information in reply to the succeeding questions.

1. "Is your state applying for primacy?"

   Yes = 38 (86%); No = 3 (7%); Undecided = 3 (7%) - These 3 undecided are included in the following discussion as "Yes" answers.

2. "Does your state have the statutory authority required to obtain primacy?"

   Yes = 20 (49%); No = 20 (49%). One state is awaiting their attorney general's opinion.

Essentially half of the 41 states applying for primacy reported that they have the statutory authority to proceed. Of the 20 states that reported "No," three commented that legislation is under way. If these three and the one "awaiting their attorney general's opinion" obtain such authority, 58% of the states will have statutory authority.

LABORATORY AVAILABILITY

A series of six questions were asked to determine the present status of laboratory testing capability. They were asked where tests are presently being performed and what their plans were for the future. There are four types of tests required by the Safe Drinking Water Act: Bacteriology, Inorganic Chemistry, Organic Chemistry and Radiochemistry. These test categories are listed here in

order of complexity. They range from the bacteriologic tests on water, which are the old established tests that most water laboratories can handle, to the radiochemical tests which are very specialized.

The first question, "Does your state have programs utilizing drinking water tests in ...?" bears this out, since the area where most has been accomplished is bacteriology. It also shows the categories where water testing will need to be expanded.

TABLE I

States Currently Testing Drinking Water

	Bacty	Inorganic	Organic	Rad.
Yes	41 (100%)	41 (100%)	34 (83%)	31 (76%)
No	0	0	7 (17%)	10 (24%)

Answers to the second question, "What laboratories perform the following tests on drinking water in your state?" indicated that as the tests became more complex, the more apt they were to be centralized. For example, only 20% of the states rely on their own lab for bacteriology, 39% for chemistry, and 65% for radiochemistry. Generally, organic and radiochemistry are done in either state or commercial laboratories.

Laboratories of all types are involved in bacteriology testing. Local health, commercial, and utility laboratories have been combined in the following chart and listed as "others" in the "State and others" category. Each category of Table II is exclusive with no overlapping in any of the other categories.

TABLE II

Laboratories Currently Testing Water

Type of Laboratory	Bacty	Inorganic	Organic	Radio. *
State only	8 (20%)	16 (39%)	16 (39%)	26 (65%)
State; others	32 (78%)	23 (56%)	16 (39%)	6 (15%)
Local only (1)	1 (2%)	1 (2%)	0	0
Commercial	0	0	1 (2%)	2 (5%)
No tests done	0	1 (2%)	8 (20%)	6 (15%)

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* One state plans to send all water samples out of state for radiochemistry.

(1) Suspect this is a "state" laboratory.

We also asked if out-of-state laboratories were used, to give us an idea of the extent that reciprocity might be required:

In addition to in-state testing, samples are sent out-of-state for bacteriology in 8 states, inorganic chemistry in 4 states, organic chemistry in 6 states and radiochemistry in 2 states. We wonder if this is a true picture of the interstate activity! We know that rural water districts near a city across the border often send water samples to laboratories in that city.

About half of the states designated the state agency responsible for water testing. The following table shows that most water analyses are a health responsibility. However, there are at least four other state agencies involved. Perhaps more would be listed if more of the states had responded. The category "EPA (state)" includes other environmental titles such as "Environmental Conservation" or "Environmental Quality."

TABLE III

State Agencies Responsible for the Various Types of Water Analyses

Agency	Bacty	Inorganic	Organic	Radio.
Health	19	15	12	12
EPA (state)	1	2	2	2
Agriculture	0	1	1	0
Natural Resources	0	1	1	0
A.E.C. (state)	0	0	0	0
Not specified	21	19	16	18

The next question asked: "The estimated percent of required EPA testing presently being performed in your state by the above laboratories [in the various categories] ."

Over fifty percent of the laboratories responding to the question are already testing all the bacteriology water samples needed to meet EPA standards; 73% are doing three-fourths or more of the expected amount, and 92% are at the half-way point or better.

Table IV summarizes the data reported regarding the percent of required EPA testing performed by the states.

TABLE IV

Percent of Required EPA Testing Performed
by States by Category

Required Amount	Bacty	Inorganic	Organic	Radio.
100%	22 (59%)	16 (43%)	9 (24%)	6 (16%)
75 - 99%	5(14%)	3 (8%)	2 (5%)	2 (5%)
50 - 74%	7 (19%)	5 (14%)	4 (11%)	1 (3%)
25 - 49%	2 (5%)	5 (14%)	2 (5%)	5 (14%)
1 - 24%	1 (3%)	8 (21%)	11 (30%)	11 (30%)
0%	0	0	9 (24%)	12 (32%)
TOTAL STATES	37	37	37	37
No answer	4	4	4	4

Table V shows the current status of accomplishment of at least half of EPA requirements for water testing.

TABLE V

Percent of States in Relation to the 50 Percentile
of EPA Testing Requirements

	Bacty	Inorganic	Organic	Radio.
50% or greater	92	63	38	26
< 50%	8	38	61	73

We asked the states to indicate, by type of laboratory and by category of test, where they planned to expand testing capability if necessary.

The following table shows the distribution of effort reported by those states not now testing at the 100% level.

TABLE VI

Plans to Expand Testing Capability - 41 States

Type of Laboratory	Bacty	Inorganic	Organic	Radio.
State only	10 (24%)	17 (41%)	23 (56%)	23 (56%)
State & other labs *	4 (10%)	6 (15%)	5 (12%)	5 (12%)
Other only	3 (7%)	1 (2%)	0	1 (2%)
Out of state	0	1 (2%)	1 (2%)	2 (5%)
No plan	1 (2%)	1 (2%)	2 (5%)	2 (5%)
Undetermined	5 (12%)	4 (10%)	4 (10%)	4 (10%)
At 100%; no expansion planned	18 (44%)	11 (27%)	6 (15%)	4 (10%)
100%, but plan to expand **	4 (10%)	5 (12%)	3 (7%)	2 (5%)
< 100%	19 (46%)	25 (61%)	32 (78%)	35 (85%)

* "Other" includes local health, commercial, utility and out of state labs.

** These laboratories reported that they are testing 100% of the EPA requirements. Even so, they are planning laboratory expansion. They are distributed in the "State only," "State and Other," and "Other only" mutually exclusive categories, and are presented here to account for an otherwise apparent discrepancy with the first category (100% testing) of Table IV.

The states were asked to explain the steps they planned to take to assure adequate laboratory capability by June 24, 1977. The majority planned to expand and beef up their state laboratories by adding personnel, buying new equipment and some change of methods. Most of the states plan to use some EPA grant money for lab services. A few are planning to increase state appropriations.

The next most common plan was to certify and encourage other laboratories in the state.

A few states feel that only minor adjustments will need to be made to meet the standards. One state plans to pray a lot.

We asked the states to summarize (in the form of a graph) the anticipated time schedule for implementing full testing in certified laboratories. Some comments have indicated that full implementation was not possible by June 1977. The following table shows the rate at which states expect to move toward meeting EPA standards in each category.

TABLE VII

Implementation Time Schedule
Number of Laboratories at Indicated Level
(Figures in parentheses are % of laboratories)

	Bacteriology			Inorganic		
% Implemented	June '76	Dec. '76	June '77	June '76	Dec. '76	June '77
75 - 100%	26 (76%)	28 (82%)	34 (100%)	12 (39%)	20 (65%)	29 (93%)
50 - 74%	6 (18%)	4 (12%)	0	4 (13%)	6 (19%)	1 (3%)
25 - 49%	0	1 (3%)	0	3 (10%)	4 (13%)	0
0 - 24%	2 (6%)	1 (3%)	0	12 (39%)	1 (3%)	1 (3%)
TOTAL STATES	34	34	34	31	31	31
Unk./No report	7	7	7	10	10	10

	Organic			Radiochemistry		
% Implemented	June '76	Dec. '76	June '77	June '76	Dec. '76	June '77
75 - 100%	7 (23%)	13 (42%)	27 (87%)	7 (23%)	12 (40%)	23 (76%)
50 - 74%	1 (3%)	6 (19%)	0	1 (3%)	8 (27%)	3 (10%)
25 - 49%	3 (10%)	4 (13%)	2 (6%)	3 (10%)	3 (10%)	2 (7%)
0 - 24%	20 (65%)	8 (26%)	2 (6%)	19 (63%)	7 (23%)	2 (7%)
TOTAL STATES	31	31	31	30*	30	30
Unk./No report	10	10	10	10	10	10

* One state contracting out of state

LABORATORY CERTIFICATION

In order to determine if the states know where laboratories were located within their jurisdiction, we asked the question, "Does your state have an inventory of laboratories performing tests in [the various categories] ?"

Tabulations in the table below seem to indicate that bacteriology laboratories are well defined. Many of the states reporting "No" are planning to do the work in their own laboratories. In such cases, an inventory is unnecessary.

TABLE VIII

States Having Inventories of Laboratories

	Bacty	Inorganic	Organic	Radio.
Yes	36 (88%)	23 (56%)	20 (49%)	20 (49%)
No	5 (12%)	18 (44%)	21 (51%)	21 (51%)
TOTAL STATES	41	41	41	41

The next question was, "Does your state presently have a program to certify laboratories testing water for [the various categories] ?"

One can see that most states already have a certification program established for bacteriology. The activity level in the remaining three categories is considerably less but those three are about equal to each other.

However, not all states plan to establish certification programs in all areas, so the actual need level may be different.

TABLE IX

States With Current Certification Programs by Category

	Bacty	Inorganic	Organic	Radio.
Yes	32 (78%)	9 (22%)	8 (20%)	6 (15%)
No	9 (22%)	32 (78%)	33 (80%)	35 (85%)
TOTAL STATES	41	41	41	41

Good communication is important to the smooth operation of any program. In order to get a feel for the magnitude of potential communication gaps due to organizational lines, we asked the states to indicate the agency responsible for certification. We also asked for the relationship between the certifying agency and the agency responsible for primacy. Some responded that although both responsibilities were in the same agency, they were in different subdivisions of that agency. Eight laboratories did not provide any information regarding this relationship.

In twenty-four states (59%), certification programs are in the same agency. In nine states (22%), different agencies are involved. Generally, the same agency that performs the tests also has the certification responsibility. However, in one state the inorganic and organic chemistry tests are performed by the Natural Resources Laboratory, but only a state lab will be doing the tests, so no certification program is planned. In another state, inorganic and organic tests are performed by the Department of Agriculture state lab. The certification agency for those two categories have not been designated. It is possible in this instance, that the certification program may be divided.

TABLE X

Relationship Between Agencies Responsible for Certification and Primacy

Activity	Agency								
Certification	24 He	2 He	?	He	He	EPA	EPA	He	He
Primacy	24 He	2 NR	He	?	DEQ	DES	EQC	DEC	EPA (state)

He = Health; NR = Natural Resources; DEQ = Dept. Environmental Quality: DES = Dept. of Environmental Services; EQC = Environmental Quality Commission; EPA = Federal Environmental Protection Agency; DEC = Dept. of Environmental Conservation; ? = Unspecified

We asked, "If your state does not have a certification program now, when does it plan to establish such a program in [the various categories] ?" The replies indicated confusion in how to answer the question. Therefore, results were not compiled. The comments made to the "Why" portion were used in compiling replies to the question, "Is there an adequate certification capability presently existing in your state?" (Table XI)

TABLE XI

Adequate Certification Capability

Yes	No	Not Applicable	No Reply
19 (46%)	18 (44%)	2 (5%)	2 (5%)

By far, the greatest need to establish certification capability is personnel and funds. Two states indicated a need for legislation. A few states referred to a need for rules and regulations from EPA.

We asked the states to indicate (again, in graph form) their anticipated time schedule for certifying laboratories in the various categories. The data shows again that as the tests become more complicated, more tests are being performed in a central (usually state) laboratory. Consequently, fewer states will be involved in certification programs in organic and radiochemistry than in bacteriology and inorganic chemistry.

SEE TABLE XII --- (Page 13)

In the next table (XIII), we eliminated the reports from states that will use "state labs only" (which are certified by EPA anyway). Also eliminated are those that are presently undecided regarding a time schedule to show the rate of implementing certification programs for laboratories within the states.

SEE TABLE XIII --- (Page 14)

TABLE XII

Implementation Schedule for Certification of Labs Testing Drinking Water, by Category

	Bacteriology				Inorganic			
% Certified	June '76	June '77	June '78	Mar '79	June '76	June '77	June '78	Mar '79
75 - 100%	15 (45%)	22 (67%)	25 (76%)	25 (76%)	5 (14%)	10 (28%)	17 (47%)	20 (56%)
50 - 74	5 (15%)	1 (3%)	2 (6%)	2 (6%)	0	4 (11%)	3 (8%)	1 (3%)
25 - 49	0	3 (9%)	0	0	0	3 (8%)	1 (3%)	0
0 - 24	7 (21%)	1 (3%)	0	0	16 (44%)	4 (11%)	0	0
N/A State Lab Only	4 (12%)	4 (12%)	4 (12%)	4 (12%)	12 (33%)	12 (33%)	12 (33%)	12 (33%)
Unknown	2 (6%)	2 (6%)	2 (6%)	2 (6%)	3 (8%)	3 (8%)	3 (8%)	3 (8%)
TOTAL STATES	33 (80%)				36 (87%)			
No report	8	8	8	8	5	2	2	2

	Organic				Radiochemistry *			
% Certified	June '76	June '77	June '78	Mar '79	June '76	June '77	June '78	Mar '79
75 - 100%	3 (9%)	7 (20%)	12 (34%)	15 (43%)	5 (15%)	7 (21%)	9 (26%)	13 (38%)
50 - 74	1 (3%)	4 (11%)	4 (11%)	2 (6%)	0	2 (6%)	2 (6%)	0
25 - 49	0	3 (9%)	0	0	0	1 (3%)	1 (3%)	0
0 - 24	13 (37%)	3 (9%)	1 (3%)	0	8 (24%)	3 (9%)	1 (3%)	0
N/A State Lab Only	15 (43%)	15 (43%)	15 (43%)	15 (43%)	18 (53%)	18 (53%)	18 (53%)	18 (53%)
Unknown	3 (9%)	3 (9%)	3 (9%)	3 (9%)	3 (9%)	3 (9%)	3 (9%)	3 (9%)
TOTAL STATES	35 (85%)				34 (83%)			
No report	6	6	6	6	6	6	6	6

* *One state will contract out of state*

TABLE XIII

Implementation Schedule for Certification Programs Intrastate, by Category

	Bacteriology				Inorganic			
% Certified	June '76	June '77	June '78	Mar '79	June '76	June '77	June '78	Mar '79
75 - 100%	15 (56%)	22 (81%)	25 (93%)	25 (93%)	5 (24%)	10 (48%)	17 (81%)	20 (95%)
50 - 74	5 (19%)	1 (4%)	2 (7%)	2 (7%)	0	4 (19%)	3 (14%)	1 (5%)
25 - 49	0	3 (11%)	0	0	0	3 (14%)	1 (5%)	0
0 - 24	7 (26%)	1 (4%)	0	0	16 (76%)	4 (19%)	0	0
TOTAL STATES	27	27	27	27	21	21	21	21

	Organic				Radiochemistry			
% Certified	June '76	June '77	June '78	Mar '79	June '76	June '77	June '78	Mar '79
75 - 100%	3 (18%)	7 (41%)	12 (71%)	15 (88%)	5 (38%)	7 (54%)	9 (69%)	13 (100%)
50 - 74%	1 (6%)	4 (24%)	4 (24%)	2 (12%)	0	2 (15%)	2 (15%)	0
25 - 49%	0	3 (18%)	0	0	0	1 (8%)	1 (8%)	0
0 - 24	13 (76%)	3 (18%)	1 (6%)	0	8 (62%)	3 (23%)	1 (8%)	0
TOTAL STATES	17	17	17	17	13	13	13	13

The states were asked if they had reviewed the proposed Federal rules or guidelines (circulated mid-June 1976), and whether they felt they should be promulgated as regulations or guidelines, and why. The greatest number of comments, in support of guidelines, reflect a desire for flexibility and desire to do their own thing sans Federal interference.

Comments from the labs desiring regulations reflect a call for national uniformity through more stringent criteria. One state felt the circulated criteria were too detailed for a "working lab," and didn't want them on either count.

The counts were:

1) Evaluated proposed rules or guidelines?

No = 5 Yes = 36

2) Should be promulgated as: Guidelines 33; Regulations 3; Neither 1; No reply 3; Not Applicable (EPA certifies the only lab) 1.

When asked if they were aware of the EPA automated data processing efforts, 37 replied that they were, and four reported that they were not. As for developing their own data system for record keeping, 20 were just beginning, six were half done, two had developed three-quarters of their system, and one was completed. One had a completed system for bacteriology only, nine have no system, and two did not reply to this question.

In cases where a multiplicity of laboratories were used, they were asked if a method had been established to consolidate all test results. The information listed immediately above and tabulated in Table XIV indicates that data processing capabilities are not well established.

TABLE XIV

Method Established to Consolidate All Test Results?

	Bacty	Inorganic	Organic	Radio.
Yes	14 (34%)	7 (17%)	6 (15%)	4 (10%)
No	19 (46%)	19 (46%)	19 (46%)	18 (44%)
N/A	6 (15%)	13 (32%)	14 (34%)	17 (41%)
No reply	2 (5%)	2 (5%)	2 (5%)	2 (5%)
TOTAL STATES	41	41	41	41

"Not applicable" generally indicates only one laboratory is involved, so consolidation is unnecessary.

LABORATORY FACILITIES PLAN REVIEW

Quality of laboratory work is directly related to a well-designed and equipped laboratory in which the work is performed. We asked how many states employ a laboratorian's expertise when architectural plans for utilities are reviewed. The replies seemed to indicate little involvement in the past. Fifty-five percent of the states not presently employing the laboratorian planned to do so in the future.

The count is as follows:

1) Do laboratorians review plans? Yes 8; No 32; No reply 1

2) Will they in the future? Yes 17; No 17; No reply 7

GENERAL QUESTIONS AND COMMENTS

"Yeses" barely outnumbered the "Noes" in anticipated problems to implementation of EPA requirements. Twenty-one replied "Yes," 19 answered "No," and one did not reply. Anticipated problems reported were related to legislation, funding resources, personnel recruitment, and ability to retain trained personnel.

When asked if EPA should be requested to develop data showing equivalency and acceptability of a method for analysis, 23 said they should, 14 said no, and 4 did not reply. Procedures wanted were: specific ion electrode, autoanalyzer, and graphite furnace methods for chemistry.

Thirty-six of the states planned to use EPA grant funds for laboratory purposes, four did not, and one did not reply. Planned useage is indicated in Tables XV and XVI.

TABLE XV

Planned Useage of EPA Grant Funds for Laboratory Activities

Certification only	2 (6%)
Testing only	15 (41%)
Both	18 (50%)
Other	1* (3%)
TOTAL STATES	36

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* Plant Operator Training

TABLE XVI

Percent of Available EPA Grant Funds to be Used for Laboratory Purposes

% of Grant	No. of States
1 - 24%	14 (39%)
25 - 49	11 (31%)
50 - 74	6 (16%)
75 - 100	3 (8%)
Undetermined	2 (6%)
TOTAL STATES	36

Turbidity and chlorine residual testing will be performed by plant operators. EPA has included them in the criteria governing laboratories and expects that certain standards will be developed. We asked, "Does your state have a program to approve or certify plant operators as analysts for conducting turbidity and chlorine residual testing?"

The results were:

Yes 13; No 23, and 5 states said it was part of another program.

"What plans do you have to develop this?"

Of the above 23 "No" answers, thirteen have some kind of plan, and nine do not. One did not reply. Generally, the plans include training courses and certification of water plant operators which will include the two test procedures. One state is planning laboratory certification based on proficiency performance. Two states plan to develop a program in Fiscal Year 1977.

APPENDIX D

RECOMMENDATIONS ON PROPOSED SECONDARY DRINKNG WATER REGULATIONS

Report on Proposed Secondary Drinking Water Regulations

The Council has studied these proposed regulations and introductory and appended statement. We recommend the addition of material to the intoduction, major revision of the first four pages of the Economic Analysis, and some modification of the proposed regulations.

Before elaborating on this matter, the Council takes note of the fact that the document herein discussed has not been subject to review and comment by an external workgroup. We recommend that such group, including state regulatory agencies, water suppliers, and the water consuming public, be called upon for comment.

Further, the tone of the introductory statement should strive to encourage and support state action for improvement of aesthetic water quality. It is suggested that the introductory statement be expanded to include a discussion of the hypothesis that there is a relationship between water hardness and cardiovascular disease rates. The introduction should also discuss a pair of alternatives: State established mandatory enforcement of Secondary Regulations, vs. some technique of providing for community decision concerning improvement of aesthetic water quality; for example, state legislatures granting authority to the State regulatory agency to require development of an engineering report discussing causes of poor water quality, presenting alternatives to and costs for corrective action; such report to be made available to the community for decision of further action.

The first pages of the appendix contain some material which should be incorporated in the introductory statement. Material which casts doubt on the application of the Secondary Regulations by the States is most objectionable and should be eliminated. The evaluation of economic impact should be developed in such style that it is not dependent upon degree of application of the Secondary Regulations by the States. Statements such as "Since the secondary regulations do not include monitoring requirements, the monitoring costs relative to construction and operating costs will be small and can be ignored," should be eliminated.

It is recommended that the regulations be modified as follows:

143.3 Secondary Maximum Contaminant Levels (Consumer acceptance limits).

It is recommended that the principal minteral constituents such as chloride be monitored at the same frequency as the inorganic chemical contaminants listed in the Primary Drinking Water Regulations as applicable to community water systems. A more frequent monitoring is recommended for constituents such as color and odor as appropriate to the variation in concentration of these constituents from day to day or month by month.

(a) Water containing substances exceeding concentrations listed may be objectionable to an appreciable number of people:

Color	15 color units
Copper	1 mg/1
Foaming Agents	0.1 mg/1
Hydrogen Sulfide	0.15 mg/1
Iron	0.3 mg/1
Manganese	0.05 mg/1
Odor	3 threshold odor number
Zinc	5 mg/1

(b) For the following constituents no fixed acceptable concentration is set. In general consumer acceptance is reduced as concentrations increase.

(1) Constituent concentrations lower than the Recommended are desirable for a higher degree of consumer acceptance.

(2) Constituent concentrations up to the Upper Limit are acceptable when it is not reasonably feasible to provide more suitable water.

(3) Constituent concentrations up to the Short Term Limit should be considered acceptable only for existing systems pending construction of treatment facilities or development of new water sources. Consideration should be given to limiting new services unless adequate progress is being made toward producing water of improved quality.

Constituent	Recommended	Upper Limit	Short Term Limit*
Total Dissolved Solids	500 mg/1	1000 mg/1	1500 mg/1
Conductance or Specific	800 micromhos	1600 micromhos	2400 micromhos
Chloride	250 mg/1	500 mg/1	600 mg/1
Sulphate	250 mg/1	500 mg/1	600 mg/1

*Some communities with water sources in this range use such waters with general consumer acceptance because of adaptation to the usual mineral content. Newcomers and transients are apt not to find such waters acceptable.

(c) Corrosivity (as suggested in the Second Annual Report to Congress) alternative procedures should be presented here for assessing corrosivity, without specifying maximum levels on designating a single method of measurement.

143.4 Monitoring

It is recommended that analysis be performed using analytical methods listed in "Standard Methods for the Examination of Water and Wastewater" or "Methods for Chemical Analysis of Water and Wastes."